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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,863	02/08/2006	Mikio Ikenishi	Q86726	9001

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EXAMINER	
FALASCO, LOUIS V	

ART UNIT	PAPER NUMBER
1794	

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10/08/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/532,863	IKENISHI ET AL.	
	Examiner	Art Unit	
	LOUIS FALASCO	1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 July 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-27* is/are pending in the application.

4a) Of the above claim(s) *2-4,16 and 23-27* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-15 and 17-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Papers Received

1. The Amendment and Remarks filed 07/06/09 are acknowledged.

Claims

2. The claims are 1 to 27.

Election/Restriction of Invention

3. The claims under consideration remain the substrate invention - claims 5-15 and 17-22 examined with independent claim 1 as linking claim only.

Restriction of Inventions

Applicant's election without traverse of Group II claims 5-15 and 17-22, in the reply filed on 12/19/08 is acknowledged. Claim 1 was examined as a linking claim. Applicants argue in the Remarks filed 07/06/09 that claim 2 should have been included as an elected invention; however, this is a composition claim non-elected without traverse. Similarly, new composition claims 24-27 are directed to the nonelected composition, not a substrate, and have been withdrawn from consideration. Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. See 37 CFR 1.142(b) and MPEP § 821.03.

4. The claims under consideration remain 5-15 and 17-22 with linking claim 1.

Claim Rejections and Objections

Statutory Basis

5. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Rejections

6. Claims 1 (linking), 5, 11-14 and 19-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over **Hashimoto et al** (US 6332338) and **Hayashi et al** (US 5900296) taken with **Maeda et al** (US 6297182 – newly applied).

Hashimoto et al is directed to chemically reinforced recording medium substrates that include a CaO, SiO_2, Al_2O_3 and Na_2O content within that claimed (**Hashimoto et al** at col. 4 lns 20-25,41-64; col. 5 lns 6-32 and col. 9 lns 47-54 teaching CaO within the claimed 2-25%; SiO_2 within the claimed 47-70%; Al_2O_3 within the claimed 1-10% and Na_2O within the claimed 1-10%). In **Hashimoto et al** the total percentage of SiO_2 and Al_2O_3 is within the claimed 57-80%, as **Hashimoto et al** teaches SiO_2 optimized to 35-65% and Al_2O_3 to 9.5-12% (**Hashimoto et al** col. 5 lns 56-64, col. 6 lns 55-58). **Hashimoto et al** also teaches balancing melt with glass transition temperature (*Tg*) by adjustments in TiO_2 and ZrO_2 and ZnO content with 0-10%, 0-12% and 0-10% respectively as instantly claimed (**Hashimoto et al** col. 2 ln 1, col. 8 ln 49, col. 9 lns 7-10, Table 5 at col. 19 lns 13-10); **Hashimoto et al** teaches further balancing *Tg* with *Young's Modulus* levels by replacing parts Na_2O with K_2O, bringing the glass composition within the claimed limits (**Hashimoto et al** col. 6 lns 6-9 and 24-29).

Hashimoto et al does not teach the addition of BaO and ZrO_2 in the glass. However the addition of BaO and ZrO_2 to glass is a convention well known in the glass substrate from **Hayashi et al**. BaO is a conventional additive controlling vitrification levels through regulating *Tg* levels with ZrO_2 added offset BaO content to maintain substrate durability and hardness levels as *Tg* is varied. **Hayashi et al** teaches adding small addition of BaO and ZrO_2, in instantly claimed content, optimally offsetting the CaO content for a CaO to total SrO, ZnO and TiO_2 within what has been claimed (**Hayashi et al** col. 2 In 4 to col. 3 In 4-10 – particularly at col. 2 Ins 38-39, 46-47) with applicants' SrO, ZnO and TiO_2 content at zero to 15, at zero to 10 and at zero to 10 respectively. The claims have been amended to comprise no Li_2O. **Hayashi et al** shows a preference for low Li_2O (**Hayashi et al** col. 3 In 22 and 23) and **Maeda et al** shows an optimal Tg by having no having Li_2O (**Maeda et al** col. 4 Ins 33,34 with all examples of glass comprise no Li_2O noting examples 1, 2, 3 and 6 in Table 1 col. 5 and 6 with specific examples of glass comprised of no Li_2O, compensated with components for optimal strength and maintaining low Tg for improved manufacture). These specific consistent with **Hashimoto et al** or **Hayashi et al** content [CaO : total CaO+MgO+SrO+BaO] less than or = 0.5 and a total CaO+MgO+SrO+BaO+ZnO between 3-30%.

It would have been obvious to one of ordinary skill in the art to adopt either of **Hayashi et al** addition of BaO and ZrO_2 with the **Maeda et al** absence of Li_2O in the **Hashimoto et al** glass for optimal *Tg* for improvements in working

the glass while maintaining high substrate durability (**Hayashi et al** col. 5 lns 56-64 and **Maeda et al** col. 1 lns 6, 7 and improved *Tg* levels demonstrated in specific examples 1, 2, 3 and 6 of Table 1).

- As regards claims 5, 11 and 19 chemically reinforced substrates, see **Hashimoto et al** col. 8 lns 33-35 and col. 12 lns 15 to col. 13 ln 5, demonstrating strengthened substrate in examples 1-24 and see **Hayashi et al** col. 4 ln 56 to col. 5 ln 7.
- As regards claims 12-14, 20 and 21 information or perpendicular magnetic recording system substrate, claim 21 includes a layer for recording and limits the claims to a information or perpendicular magnetic recording substrate – this glass for a substrate is taught in **Hashimoto et al** Abstract and **Hayashi et al** Abstract and **Maeda et al** col. 2 lns 35-40.

7. Claims 6-10, 15 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Hashimoto et al** and **Hayashi et al** taken with **Maeda et al** as applied to claims 1,5, 11-14 and 19-21 above, and further in view of **Ikenishi et** al (US 2003/0109370).

Hashimoto et al points out the claimed temperature ranges as the *transition point* for re-heating the glass forming a substrate (**Hashimoto et al** col. 4 lns 18-21, col. 10 lns 2-4 and col. 13 lns 6-9). **Hashimoto et al** and **Hayashi et al** taken with **Maeda et al** teach the glass substrate except the reinforced strength. **Ikenishi et al** also directed to chemically reinforced recording medium substrates teaches heating the glass to reinforcing levels claimed, (**Ikenishi et al** ¶[0073]). It would have been obvious to one of ordinary skill in the art to adopt **Ikenishi et**

al in the **Hashimoto et al** and **Hayashi et al** taken with **Maeda et al** glass substrates to optimally enhancing substrate strength and endurance to magnetic recording media system requirements including optimal thermal expansion ranges required for stabilized tracking at elevated process temperatures (**Ikenishi et al** ¶[0074]).

- As regards claims 8, 9, 17, 18 and 22 bending strength ratio prior to chemical reinforcement and a temperature treatment, this would reasonably be expected to be the same as in as the same processing conditions have been demonstrated **(Ikenishi et** al cited above) with the same composition **Hashimoto et al** and **Hayashi et al** taken with **Maeda et al** previously cited for composition in above paragraph 7.
- As regards claims 15, 17 and 22 substrate, a product of heating, see **Hashimoto et al** col. 4 Ins 19-27 and adjustments for substrate thermal expansion by reheating and annealing, steps optimized to reduce thermal stress and **Hashimoto et al** at col. 10 Ins 1-4, col. 8 Ins 25-29 also **Ikenishi et al** is within same claimed levels see e.g., example 83 at **Ikenishi et al** ¶[0142]).

Answer to arguments

8. Applicant's arguments filed 07/06/2009 with respect to all claims have been considered but are moot in view of the new grounds of the rejection **Hashimoto et al** (US 6332338) and **Hayashi et al** (US 5900296) is now taken with **Maeda et al** (US 6297182 – newly applied) in response to applicants'' amendment to independent claim

Conclusion

9. The claims are 1 to 27. The claims under consideration remain those drawn to the elected substrate invention - claims 5-15 and 17-22, independent claim 1 has been considered as linking claim to elected invention.

10. No claim has been allowed in this action.

THIS ACTION IS MADE FINAL.

Applicant's arguments with respect to the claims have been considered but are moot in view of the new ground of rejection.

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

INQUIRES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis Falasco whose telephone number is (571)272-1507. The examiner can normally be reached on M-F 10:30 - 7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Ruthkosky can be reached at (571)272-1291. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/L. F./
Examiner, Art Unit 1794

/Kevin M Bernatz/
Primary Examiner, Art Unit 1794

October 8, 2009